

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: LEE, Joong-Hee; YOO, Gye-Hyoung

SERIAL NO.: (International Serial No. PCT/KR2004/002319)

FILED: Herewith (International Filing Date: 10 September 2004)

TITLE: HIGH GAS-TIGHTENED METALLIC NOZZLE-BOSS FOR A HIGH PRESSURE
COMPOSITE VESSEL

REMARKS ON PRELIMINARY AMENDMENT

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

In conjunction with the filing of the present application, and prior to an initial Official Action on this matter, please amend the above-identified application as provided in the attached Marked Up Copy and Substitute Specification.

Please note that the following amendments in the Substitute Specification apply to the attached specification and claims labeled for "U.S. filing". This combined application incorporates the original application and any amendments or annex to the International Application in the proper order, including the correct original and substitute pages, claims and drawing sheets.

In this preliminary amendment, please consider the following remarks in conjunction with the amendments to the above-identified application as follows:

REMARKS

The present Preliminary Amendment has been entered for the purpose of placing the application into a more proper U.S. format. In particular, certain grammatical and idiomatic

inconsistencies have been corrected by amendment to the specification, and the application is corrected for certain typographical errors found in the originally submitted application. No new matter has been added by these amendments. The present application incorporates the original filing including any amendments made in the international filing. There was no amendment in the International Application, and there is no annex to the International Preliminary Examination Report because there were no Demand for the IPER. The present specification is an English language translation of an originally Korean language document.

The Claims have been amended so as to conform with U.S. requirements and so as to remove multiple dependent claims.

Applicant respectfully requests that the present Amendment be entered prior to an initial Official Action on the present application.

Respectfully submitted,

31 August 2006

/s/ Andrew W. Chu

Date

John S. Egbert
Reg. No. 30,627
Andrew W. Chu
Reg. No. 46,625

Customer No. 24106

Egbert Law Offices
412 Main Street, 7th Floor
Houston, Texas 77002
(713)224-8080
(713)223-4873 fax

CLAIMS

We claim:

1. (Currently amended) A metal nozzle boss for high-pressure composite vessels, ~~the said~~ metal nozzle boss ~~being combined for use~~ with a plastic liner (2) of ~~the~~ high-pressure composite vessels ~~and, said metal nozzle boss~~ comprising:

a cylindrical nozzle head part (6) ~~which has both~~ having a vertical through hole (7) and an internal thread (8) formed on an upper portion of an inner circumferential surface of ~~the said~~ vertical through hole (7);

a disc-shaped nozzle blade part (9) protruding outwards around an outside edge of a lower end of the nozzle head part (6), ~~and, the nozzle blade part having~~ an upper sloping surface (18) and a lower sloping surface (19) respectively provided on an upper surface and a lower surface of the nozzle blade part (9), ~~the metal nozzle boss (1) comprising;~~

a seal ring mounting part (13) depressed into a lower surface of a multi-stepped support rim (16) which protrudes upwards and outwards from an outer circumferential surface of the nozzle ~~boss (1)~~ head part at a position below the lower sloping surface (19);

a sealing device (12) extending downwards from ~~the said~~ seal ring mounting part (13) and having both an external tightening thread (15) formed around a lower portion of an outer circumferential surface of ~~the said~~ sealing device and a tightening land (14) formed between an upper end of ~~the said~~ external tightening thread (15) and ~~the said~~ seal ring mounting part (13), ~~the, said~~ tightening land (14) having a diameter equal to a diameter of a root of ~~the said~~ external tightening thread (15);

a tubular tightening piece (17) having an internal tightening thread and engaging with ~~the said~~ external tightening thread (15) of ~~the sealing device (12)~~ such that an upper surface of the

Marked Up Copy

tightening piece (17) comes into contact with an inner surface of ~~the~~ said plastic liner (2), with a depressed seal ring seat (21) provided on ~~the~~ said upper surface of the tightening piece (17) at a position corresponding to a junction ~~between the metal nozzle boss (1) and the~~ with said plastic liner (2); and

a seal ring (24) seated in the seal ring seat (21) of the tightening piece (17) such that a lower surface of ~~the~~ said seal ring (24) comes into close contact with the seat (21), ~~and~~ a first surface thereof ~~comes~~ coming into close contact with ~~the~~ said seal ring mounting part (13) ~~of the metal nozzle boss (1), and~~ a second surface thereof ~~comes~~ coming into contact with the plastic liner (2).

2. (Currently amended) The metal nozzle boss for high-pressure composite vessels according to claim 1, wherein each of ~~the~~ said upper sloping surface (18) and ~~the~~ said lower sloping surface (19) of the disc-shaped nozzle blade part (9) ~~protruding outwards around the outside edge of the lower end of the nozzle head part (6)~~ is provided with a locking groove (10) having a dovetail cross-section, with a plurality of locking ridges (11) formed on an inclined surface of the locking groove (10).

3. (Currently amended) The metal nozzle boss for high-pressure composite vessels according to claim 1, wherein ~~the~~ said seal ring (24) has a circular or polygonal cross-section and is ~~made~~ comprised of rubber, silicone or soft plastic.